

# Red Shift, Blue Shift

## Summary

This is designed to help students understand the Red and Blue Shift through a game-like demonstration.

## Time Frame

1 class periods of 15 minutes each

## Group Size

Large Groups

## Materials

none, an open space the size of a classroom is helpful and this could take place outdoors.

## Student Prior Knowledge

Students should have an understanding of Red and Blue shift.

## Instructional Procedures

Begin by having your class face you in a group. Make sure you are 10-15 feet away from them. Tell them you are Earth and they are stars. You will say "red shift" or "blue shift" and they will need to move away from you or towards you depending on what you say. Practice with them for a few times. If you'd like to make it more game-like, tell them that they will be "out" when they move the wrong direction. Try it a couple more times only have students go "out" when they move the wrong way.

Add another player (another galaxy) on the other side of your group to call out red or blue shift. The students will need to think harder now because they will need to move toward or away from who ever is speaking. The teacher and the other galaxy take turns calling directions.

For even more difficulty, add additional "galaxies" on the other sides of the group. The teacher and the "galaxies" can go faster. The final players can be given a small prize, privilege or applause.

## Bibliography

Lesson Design by Jordan School District Teachers and Staff.

## Authors

[Utah LessonPlans](#)